THE REYNOLDS COMPANY
ELECTRICAL SUPPLY

TRC Users Group

Online Seminars

Plant PAx® 5.0

September 17, 2020

Our Call will begin at 10:00 a.m.

Introductions

Justin Ryan
Presenter
Process Solution Consultant
Rockwell Automation
Houston

Brian Mikeska
Panelist
Automation / Network Specialist
The Reynolds Company – Houston

Mike Masterson
Panelist
Automation / Network Specialist
The Reynolds Company – Houston

Jesse Harvey
Panelist
Automation / Network Specialist
The Reynolds Company-DFW

2020 Online Events - Register to receive a calendar invite

User Group

Thursday, October 22,
Condition Monitoring
10:00 am

Tech Talks

Tuesday, September 23th
Encompas Partner Update-
Softing
10:00 am

Wednesday, October 7th
Encompas Partner Update-
Sytech/XLReporter
10:00 am

Wednesday, October 28th
Visualization Update- VersaView 6300
10:00 am

https://www.reynoldsonline.com/eventsUnit.action


Rockwell Automation
Automation Fair®
AT HOME
NOV 16 – 20
Creating a new world-class experience for Automation Fair 2020 to showcase the power and value of our IT/OT expertise.
The Automation Fair At Home experience will feature the newest solutions and innovations, the opportunity to interact with technology experts and executives, participate in engaging hands-on labs, training sessions, industry focused forums, and keynote presentations, and network with leading professionals in the field.
MORE INFO
Registration and event details will be available in September.

Rockwell Automation

expanding **human possibility**™

PlantPAx® 5.0 – The Modern Distributed Control System

Justin Ryan

PROCESS CONTROL

REDEFINED

TRADITIONAL DCS

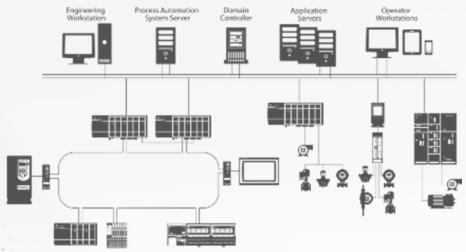
- **Closed system design**
- Slower Time to Market
- **Difficult** to migrate and modernize
- Higher **Total Cost of Ownership**

MODERN DCS

- **High Performance and Site-Wide**
- **Wider range, Scalable** system capabilities
- **Open** technology stack
- **Ease of Integration** and Information flow

THE CONNECTED ENTERPRISE

PlantPAx
Distributed Control System



PLANT-WIDE
Control and Optimization

SCALABLE
and Modular

SECURED
Open and Information-enabled

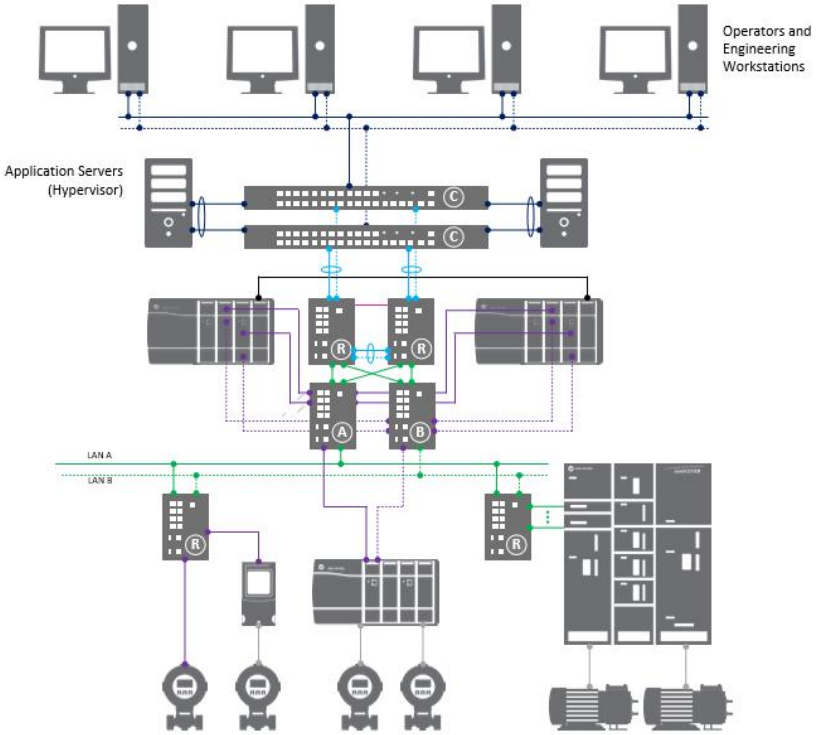
FLEXIBLE
Delivery and Support

PlantPAx® System

Tools and Solutions
- Rapid Code development
- Process System Estimator
- Process Object Library Migration Tool
- Alarm Builder
- Competitive DCS Migration

Library of Objects
- Standard Objects reusable objects
- Class based solutions
- Known performance characterization
- Digital Device & Instrumentation Interface Objects

Reference Architecture
- Network Infrastructure
- Integration Skids
- Cybersecurity
- Platform Scale
- Known Performance



Product Development
- Key Process Features
  - Controller
  - Power
  - HMI
  - Historian
  - Asset Management

Documentation
- System Guidelines
- System References
- User Manuals
- Selection Guides
- Infrastructure Manual
- Online Help

Bundling and Services
- Process System Lifecycle Support
- Asset Utilization
- Network Services
- Cybersecurity

- Reduced Footprint
- Drives Consistent Delivery
- Streamlined Workflows
- Cybersecurity Enabled

PlantPAx® System 5.0

Purpose Built for Plant-wide Control; Spanning Batch, Hybrid, and Heavy Industries

Serve larger and more complex operations in a secured manner

- Simplified Architectures with reduced server requirements
- Higher Performance Redundant Process Controllers
- Embedded Process Objects
- Alarms in objects for single configuration
- Automatic Hardware Diagnostics
- IEC62443-3-3 Cybersecurity Certification
- Improved HART configuration/HART data structures
- New Organization, Ownership and Arbitration functionality
- Embedded Libraries support 21CFR11 audit trails & e-signature
- Full Unicode character support for end-to-end language switching

Benefit

- Intuitive workflows eliminate tasks, and simplify design & deploy effort
- Systems that are easier to deploy and simpler to maintain
- Promotes consistent delivery from site to site.

Rockwell Automation

Expanding the Logix Family for Process

Reduce deployment time and variability for process applications in the ControlLogix® and CompactLogix™ families.

Overview

Leverage native features like embedded instructions and task modeling to minimize project design time.

Available in three ControlLogix® catalogs and two CompactLogix™ catalogs.

Benefit

- Out-of-the-box settings and instructions that follow PlantPAx® guidelines
- 8-series Logix controller performance profile
- Intuitive workflows eliminate unnecessary rework, simplify design and deploy effort

Embedded Process Instructions

Simplifying Lifecycle Management

Reduced footprint (Simplification & Strings)

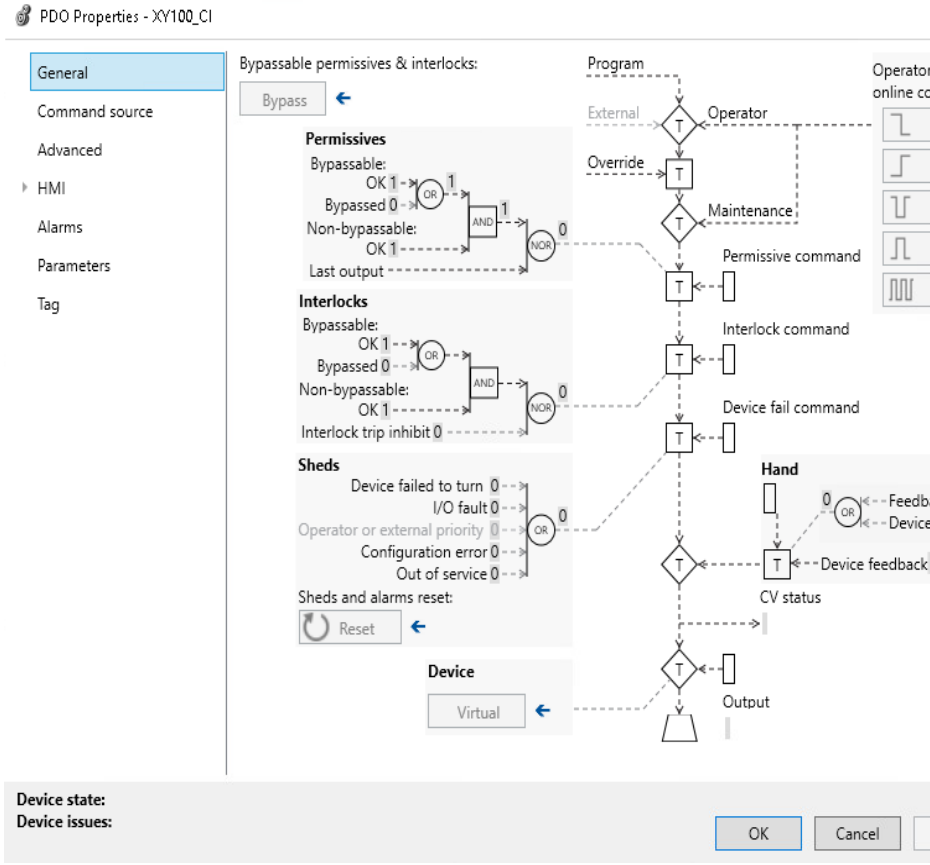
- Many strings moved from instructions to extended tag properties
- Instructions in firmware (No overhead memory consumed)
- Less Servers, higher data volumes

Drives consistent delivery

- Library native to controller and design pallet
- Simplifies lifecycle management

Streamlined workflow

- Controller based alarming
- Instructions native to controller (no importing of AOIs)
- Supports multiple library versions on one system



Process Controller Exclusive

PlantPAx® System 5.0

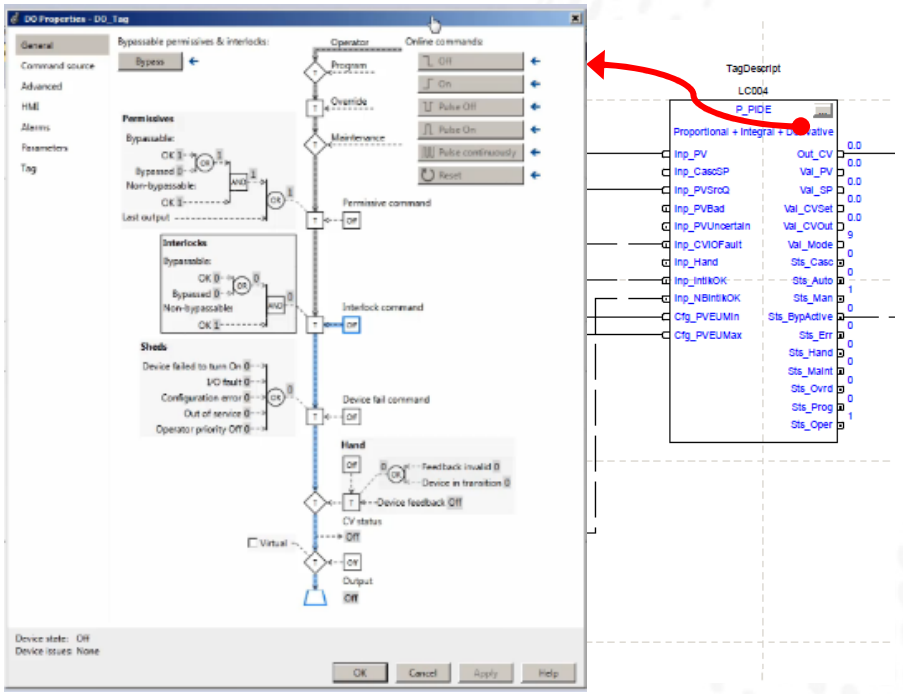
Process Objects – NG Integrated Configuration

Overview

- New SAMA diagram interface

Benefits

- Intuitive design-time configuration interface
- Consistent experience w/ objects and firmware instructions
- Eliminate need for disparate tools
- Greatly reduce # of steps to configure new object
- All objects decorated with screen content
- Online help



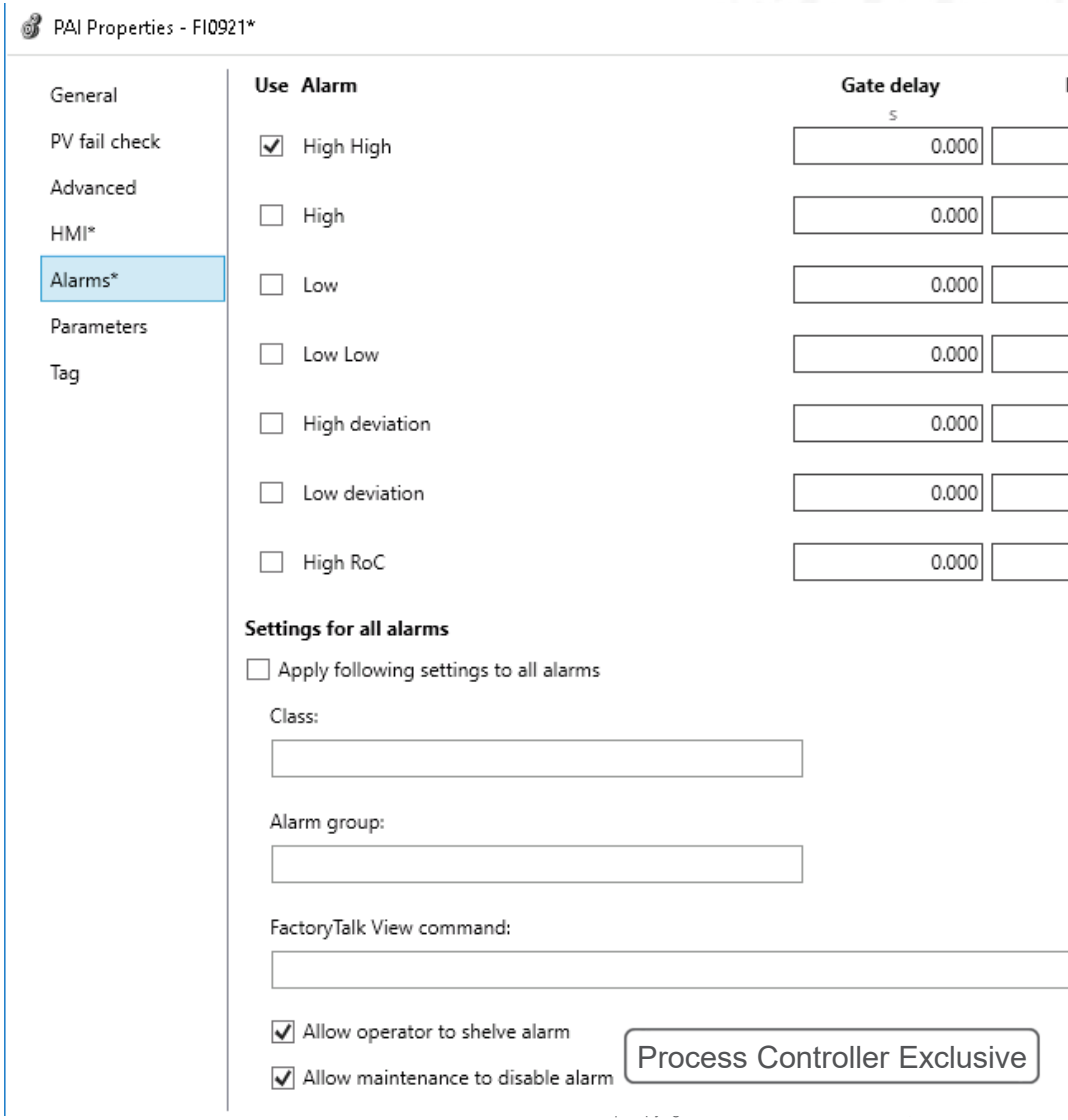
Rockwell Software Studio 5000

Process Controller Exclusive

PlantPAx® System 5.0

Select and Go Alarms within the Instructions

- Simple alarm setup and configuration
- Single environment – deploy alarms when creating control elements in Logix Designer
- One place to go to add and configure alarms
- One click to add alarms from the object's definition
- Predefined alarms on every object
- Allow users to enable alarms for each instance.



Rockwell Automation

Dual Library Support

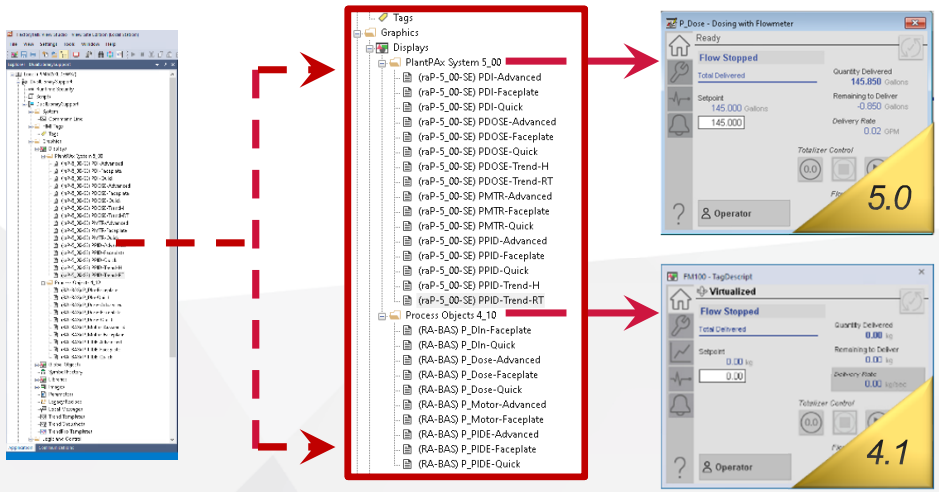
PlantPAx® 5.0 System Release utilizes two process object libraries

Consistent User Experience

- PlantPAx 4.x library lives on in parallel with NG
- Both Add-On Instruction and NG objects co-exist together in PlantPAx® 5.0
- Both Add-On Instruction and NG faceplates co-exist together in PlantPAx 5.0

Phased Migration Support

- Mixed library applications are supported
- Allows for gradual adoption of new technology
- Support for AOI and Embedded style



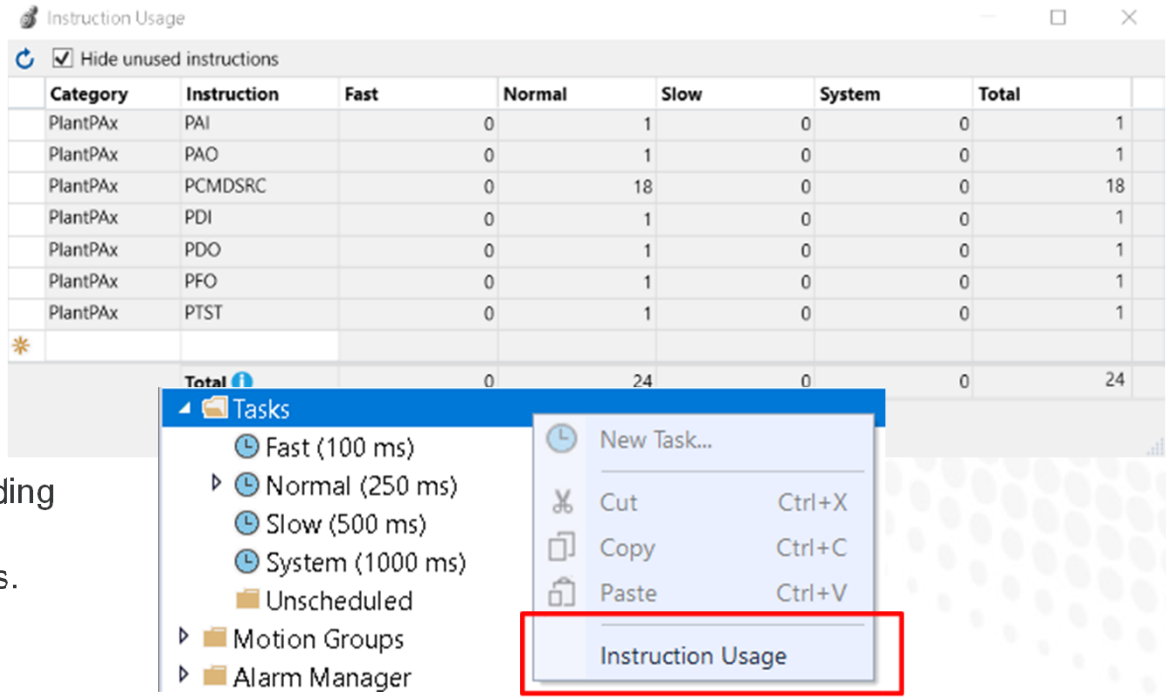
Instruction Usage

See PlantPAx® and Process instruction usage per task for optimal task balancing and visibility

Overview

See a dashboard of each task and the instructions used.

Use with embedded webpage to see CPU utilization and avoid task overlap.



Benefit

- Consistent performance and visibility into task loading during project creation.
- Easier identification of number of control strategies.

Process Controller Exclusive

Task Model

Automatically create consistent task model in Logix Designer

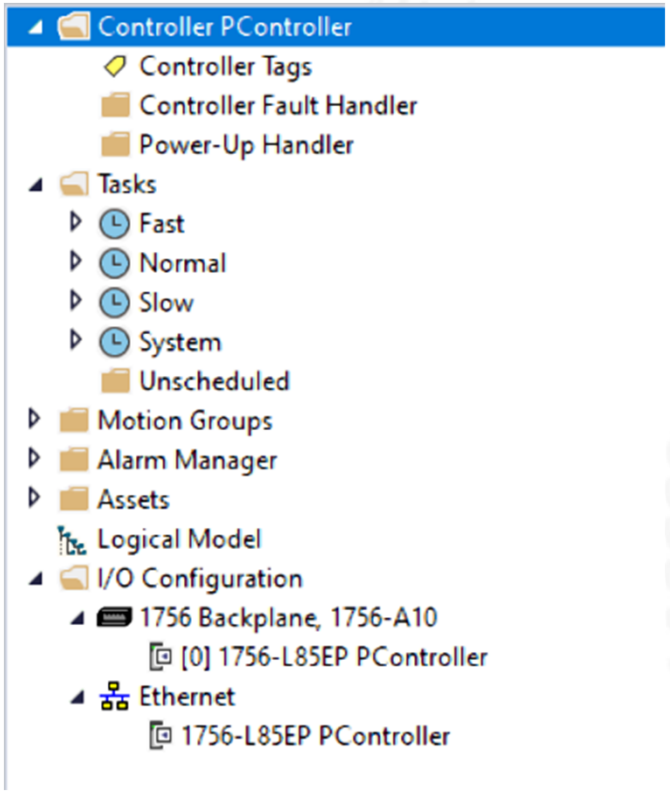
Overview

Start a project with a Fast, Normal, Slow, System periodic tasks already created.

Tasks created with period, priority and names already specified according to PlantPAx® guidance.

Benefit

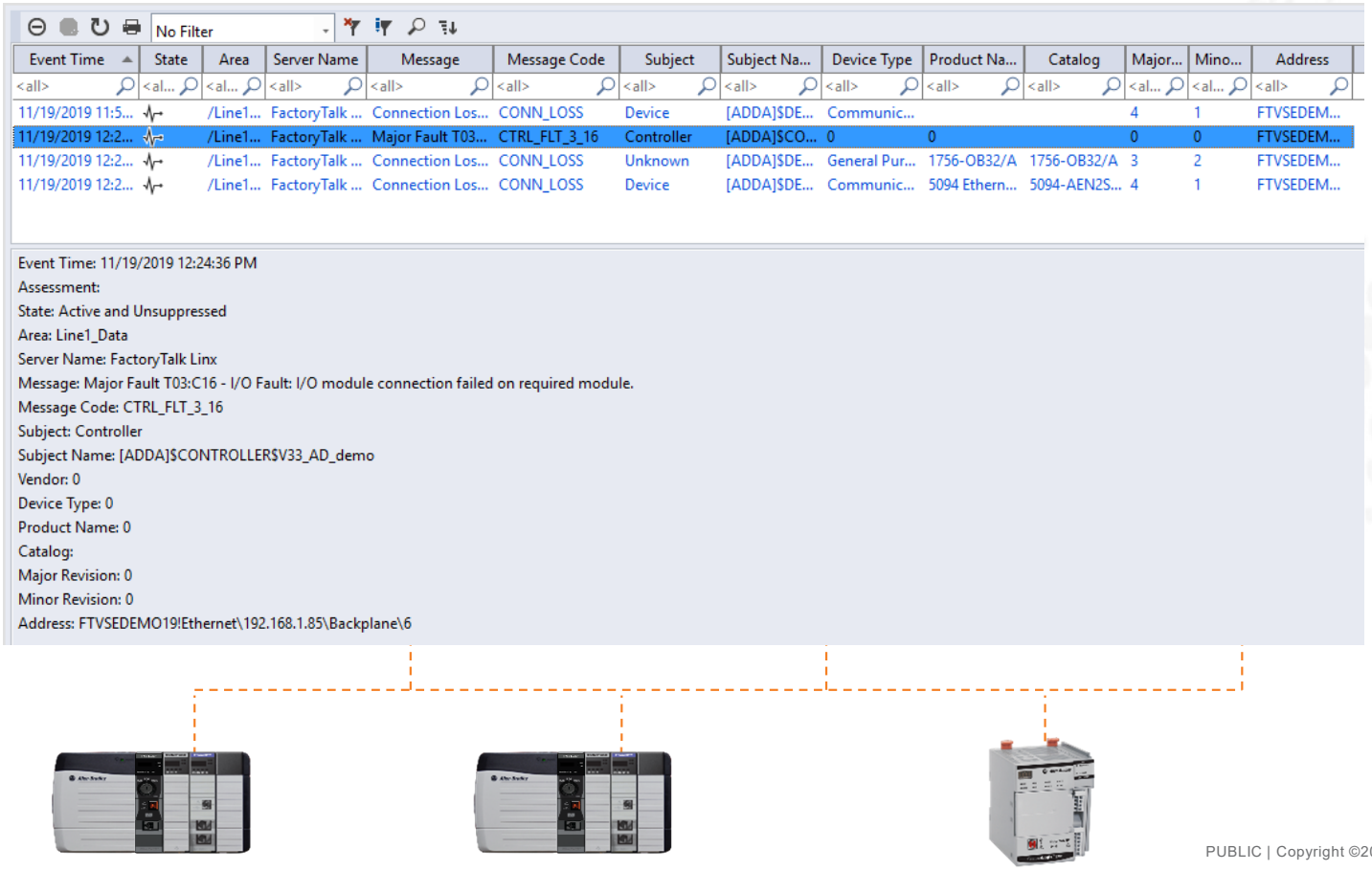
- Shorter time dedicated to project creation and layout.
- Consistent project structure that aligns with PlantPAx program guidelines.
- More predictable performance estimates and planning.



Process Controller Exclusive

Automatic Diagnostics

FactoryTalk® Alarms and Events v.6.20



Organization, Ownership, and Arbitration

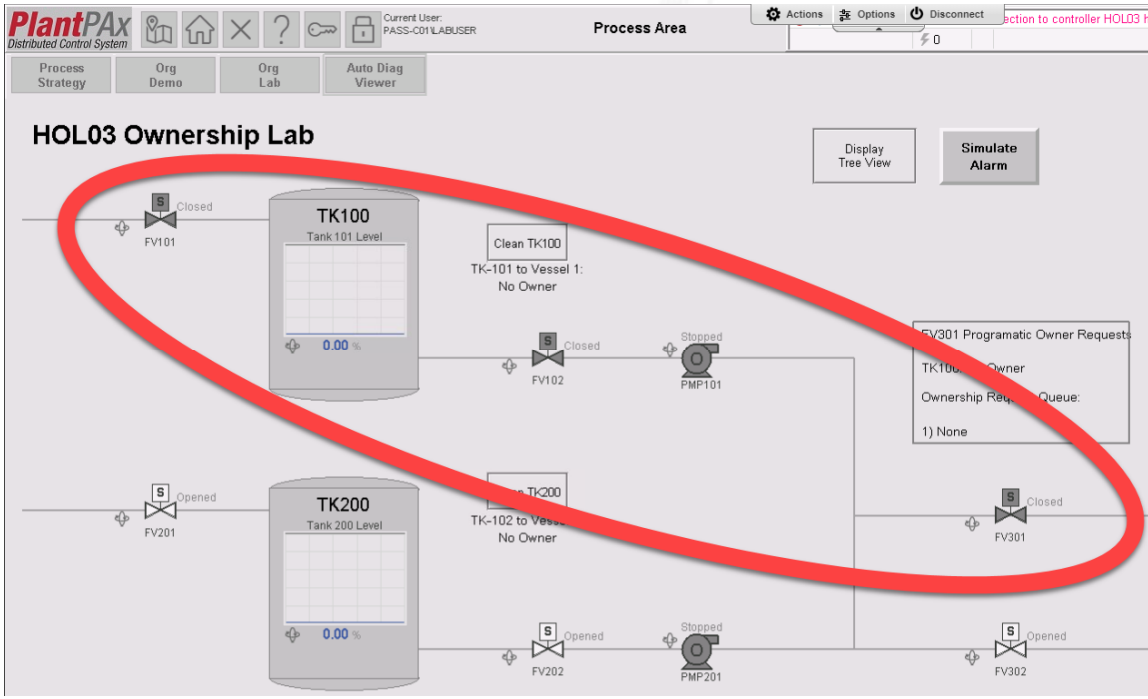
Managing equipment using native functionality on PlantPAx® 5.0 objects

Overview

- Create organizational trees of related devices directly from the HMI
- Manage and prioritize device ownership within these trees
- Propagate commands down and statuses up the organizational trees (ie: Alarms, Physical vs. Virtual Mode, and Command Source)

Benefits

- Ability to command devices as an equipment group
- No custom code required to create equipment groups
- Identifies ownership status of equipment groups
- Queues ownership requests of an equipment group and allows user to set custom arbitration rules
- Get statuses and issue commands to equipment groups from a single request
  - Commands propagate down from selected parent
  - Status propagates up from children



Studio 5000® Application Code Manager

Version 3.0

Library artifacts

Ability to add additional artifacts with a given library object (i.e. FactoryTalk® View Global Objects required for a Faceplate, user documentation, and so on)

Artifacts get created with the library object

Library Links

Ability to create a parent level object that has several children configured via library links

Example: a Tank object created is linked to multiple valve children objects. Adding the tank object now **automatically** creates the valve children.

Now: one valve object definition can be used multiple times in other higher-level library objects

Command Line Console Expansion

Supports create project, add controller, add objects and delete project

Indicate that a higher version of an object is available in the library

Support for Logix tag-based alarms

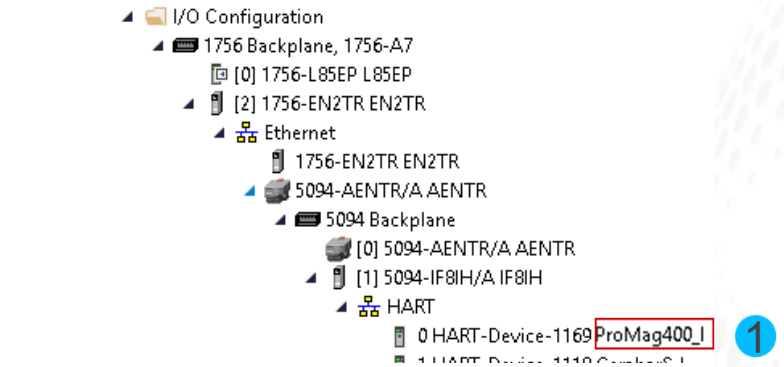
Highly Integrated HART

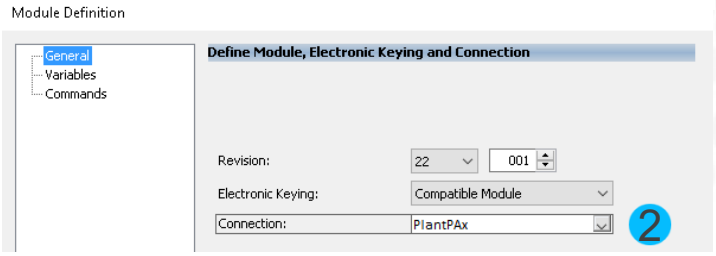
Features

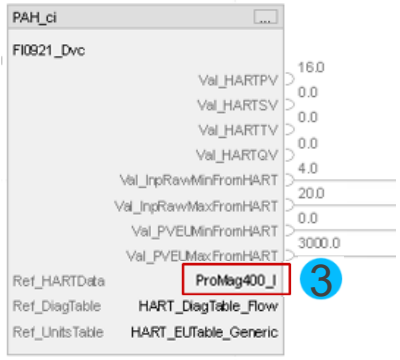
- Add and replace HART devices online
- HART signals & connection status indicated Logix Designer I/O tree
- Integrated device diagnostics via profile
- PlantPAx® connection type selection

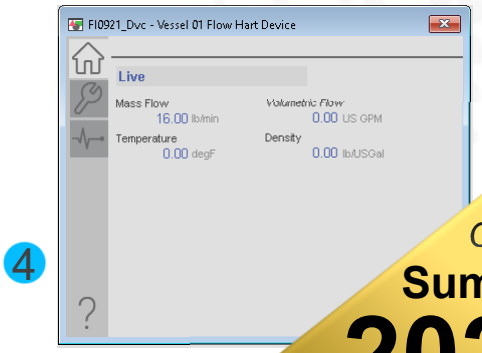
Benefits

- Intuitive Integration
  - Visible access to HART reference name
  - PlantPAx data type (connection) pre-defined for PAH (HART interface) instruction
- Device diagnostics included in PlantPAx data type connection
- Out of the box Faceplate renders HART content









Coming
Summer
2020

Rockwell Automation

FLEX 5000™ HART I/O modules

Isolated HART analog input and output modules

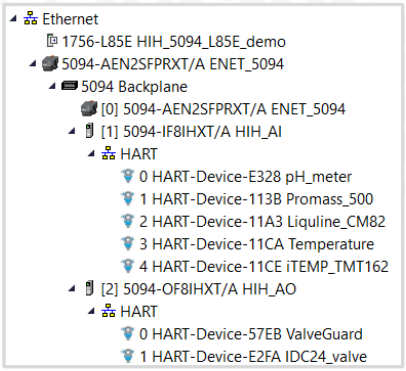
Features and benefits

- 8-channel to channel isolated input and output modules
- Each channel can be configured as current, voltage or HART individually
- HART V7, V6 and V5 support
- Current sourcing of isolated loop power
- Readback functionality for outputs
- Per channel diagnostics with time stamp and protection
- New Logix feature – highly integrated HART (HIH)*
  - Visible access to HART devices
  - HART bus in Studio 5000 Logix Designer® application I/O configuration tree
  - Device connection fault status representation in I/O tree
  - Add and replace HART devices online
  - Integrated device information view
- Works with Studio 5000 Logix Designer® application, version 32 or later
- Documentation in Literature Library and Add-on Profile (AOP) in Product Compatibility and Download Center (PCDC)

See FLEX 5000™ modules technical data (5094-TD001) for more details.
**Learn more about HART I/O at FLEX 5000™ Analog Isolated Current/Voltage/HART Input and Output Modules (5094-UM007).*

Catalog 5094-IF8IH
Catalog 5094-IF8IHXT

Catalog 5094-OF8IH
Catalog 5094-OF8IHXT



PlantPAx® 5.0 Improved Network Guidance

By improving both sales and implementation guides, it has never been easier to deploy a PlantPAx Network!

Selection Guide Improvements

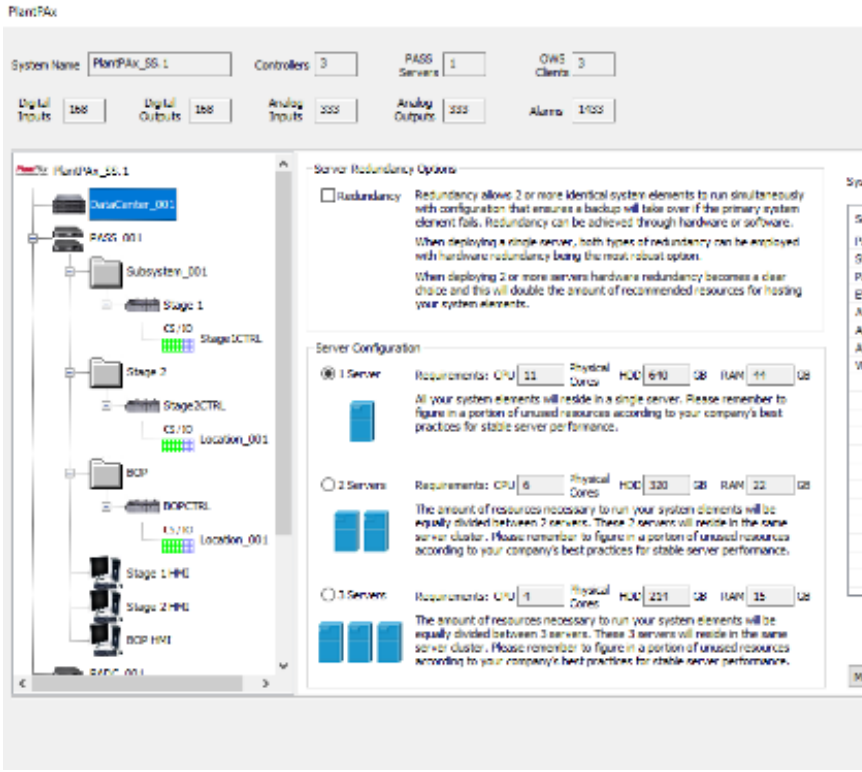
- Application Requirement lead network selection
- Considerations for each Reference Architectures
- Prescribed hardware per Reference Architecture

Process System Estimator

- New Network infrastructure guide to assist the user through the selection process
- Ability to combine multiple Reference Architectures within your DCS
- Ability to either select a System(Core) layer switch or use existing
- Reference Architectures within the Subsystem(Distribution) layer

System Infrastructure Manual Improvements

- Reference architecture focused configurations
- Recommended verification steps to verify configuration



PlantPAx® 5.0 Network Improvements

Enhanced Redundant – PRP Ref Arch

- No Single Points of Failure
  - Redundant PRP Redboxes

Enhanced Resilient – DLR Ref Arch

- 1756 EN4TR Redundant Adapter Support
  - Adapter supports Simplex CLX and IO Racks

5094 FLEX™ I/O Support

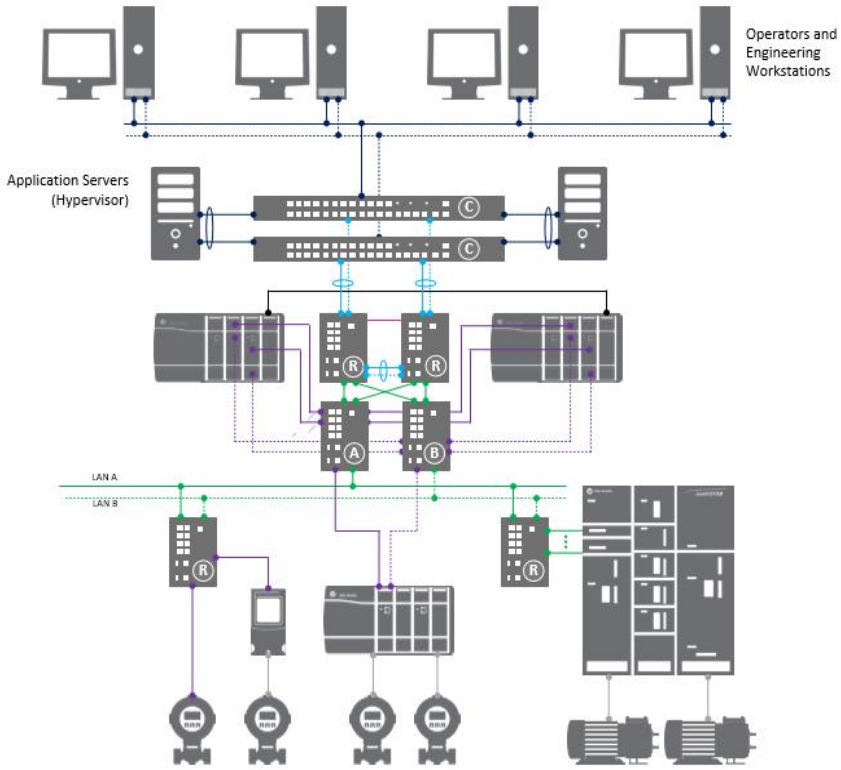
- Supported within both Redundant and Resilient Ref Arch

Cisco 9300 Support

- Characterization complete utilizing Cisco 9300 Core Switches
- Configuration information provided in Infrastructure Manual

Network Health Monitoring

- Automatic Diagnostics
- FactoryTalk® Network Manager™



ControlLogix® Process Controller High Availability

Available at Launch of PlantPAx® 5.0!

- Intended as an addition to the 5570 redundancy solution (also available in V33)
- Leverages the 1756-RM2 modules
- No memory reduction when selecting redundancy - effectively doubling memory available over the 5570 redundant solutions

V33

Process Instructions

Native instructions minimizes extra compliance work in validated industries as a common, off the shelf solution.

Off the Shelf

- Instructions can be referenced as a standard offering without needing “Add-ons”
- Developed using a standard documented process with quality plan
- Standardized naming conventions
- Documented functional requirements and test requirements

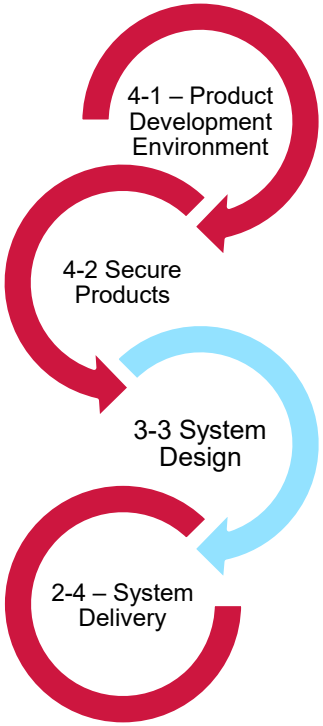
Compliance

- E-signatures on operator actions (FDA 21 CFR pt 11)
- Audit trails on operator actions (FDA 21 CFR pt 11)

Process Controller Exclusive

Cybersecurity Certifications

ISA99/IEC 62443



Done

IEC 62443-4-1 – Rockwell Automation has a certified secure development lifecycle.

Done

IEC 62443-4-2 – Select products in the Rockwell Automation portfolio are certified against this standard as an enabler to system cybersecurity

- IEC 62443-3-3 – A Rockwell Automation system reference architecture will have certification that provides the basis for all customer systems to get certified.*

Done

- IEC 62443-2-4 – Rockwell Automation delivery arm (SSB) have processes and certification to deliver customer system that are cyber secure

PlantPAx®
Distributed Control System
5.0

Securing your PlantPAx® system in The Connected Enterprise White Paper
Published with the PlantPAx 4.6 Launch, Summer 2019
It's 10:00 p.m. Do You Know Where You Data Is?
Blog Post for Life Sciences Cybersecurity

OEM Enhancements

Improving Consistency Utilizing Purpose Build Technology

Consistent Delivery

- Expanded Templates
- Embedded Process Library
- One-touch alarming and diagnostics configuration

Enhanced Visualization Functionality

- Expanded options for hardware
- Simplified Alarm/Diagnostics Management and Integration

Purpose Build Hardware

- Conformal Coating
- Dual Ethernet Ports
- Improved performance

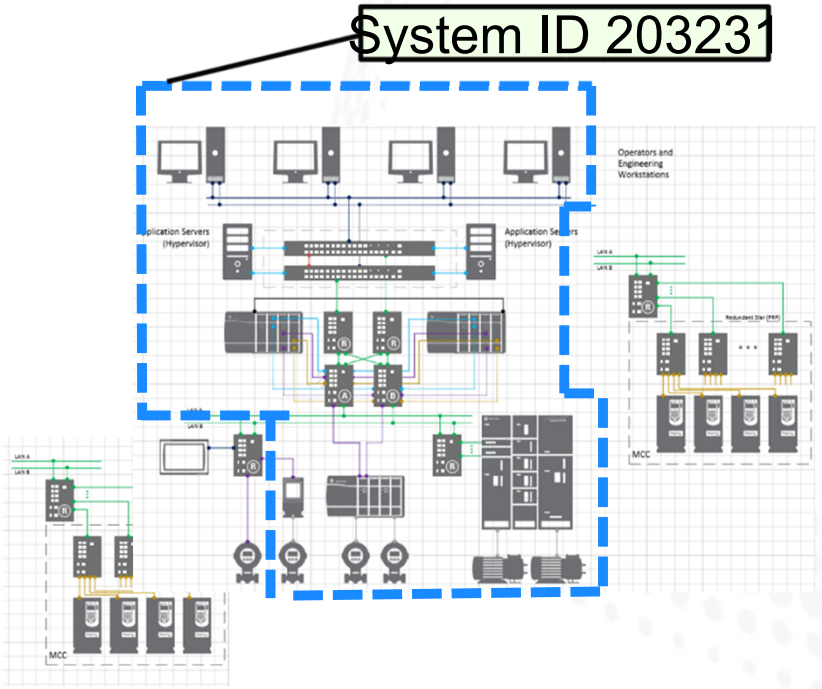
Simplified Integration

- Alarms and Diagnostics data pushed up to DCS
- Simplified HMI Integration
- Scalable Analytics from the Skid to the DCS

PlantPAx® System ID

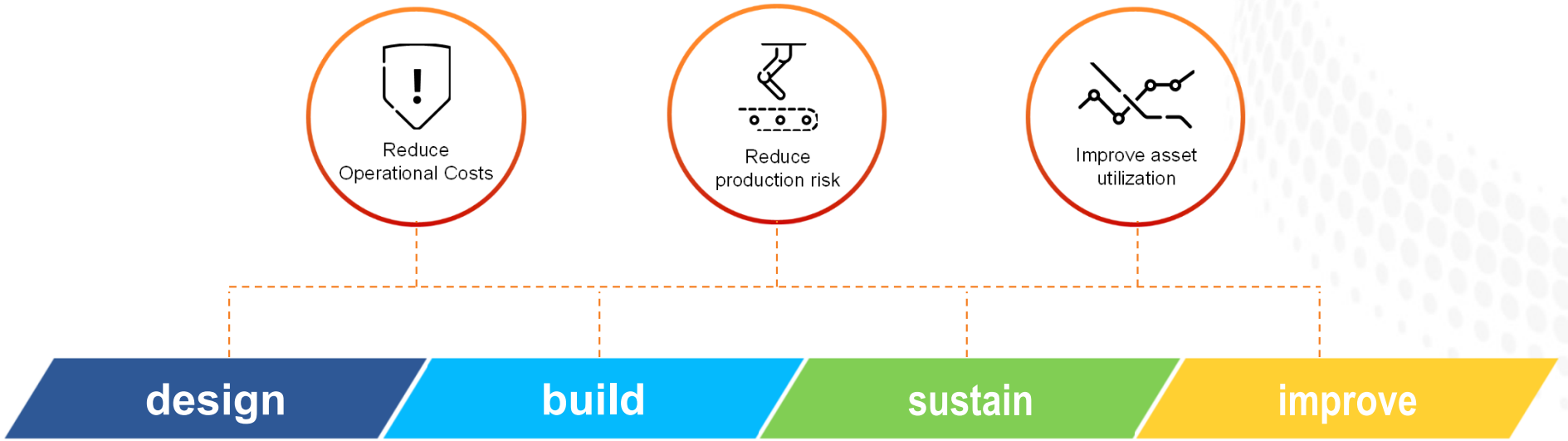
Simplifying Lifecycle Management

- PlantPAx System 5.0 provides a unique identifier for your SYSTEM
- Associated with the System ID, the system inventory allows for:
  - improved tech support speed and experience
  - better management of hardware and software lifecycle
  - quick identification of patches and product service announcements relevant to your system
  - better management of security patches
  - improved management of product compatibility for updates and upgrades
  - preservation of system content knowledge as staff changes
  - right sizing spare parts inventory and management



Leveraging project **lifecycle support**

Integration of critical support elements throughout the process



Enabling FactoryTalk® InnovationSuite via PlantPAx® DCS

Rockwell Automation | ptc

PlantPAx Distributed Control System

FactoryTalk Historian Site Edition

OperationSuite

FactoryTalk Linx Gateway and FactoryTalk Historian ThingWorx Connector

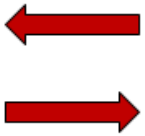
thingworx

thingworx analytics

vuforia

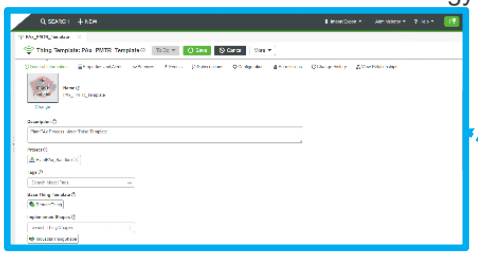
Live and Historical Data

- Via Pi Asset Framework with Event Frames

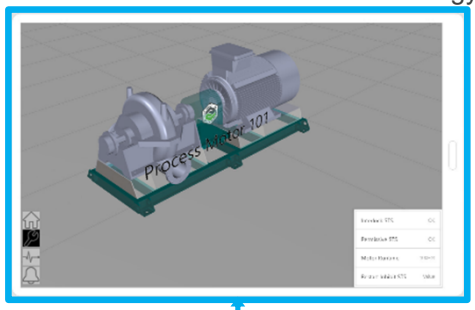


FactoryTalk® InnovationSuite for Process Applications

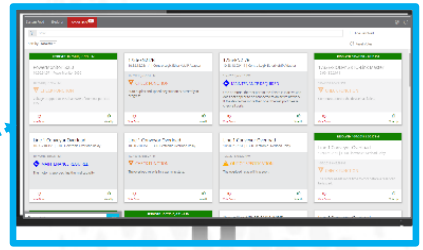
thingworx®
Process Strategy Templates



vuforia™
Process Strategy Templates



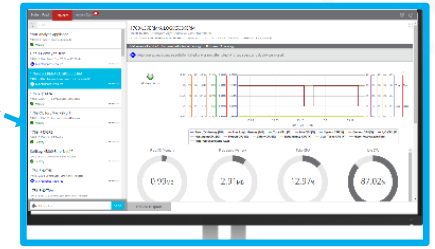
FT Analytics™ for Devices
Dashboard View



thingworx®
Alarm Dashboards

PlantPAx
Distributed Control System

FT Analytics™ for Devices
Action Card View



FactoryTalk® Batch 14.0

Improve Uptime

New runtime area model edits makes your system more flexible while at the simultaneously improving the system uptime.

Reduce Recipe Management Overhead

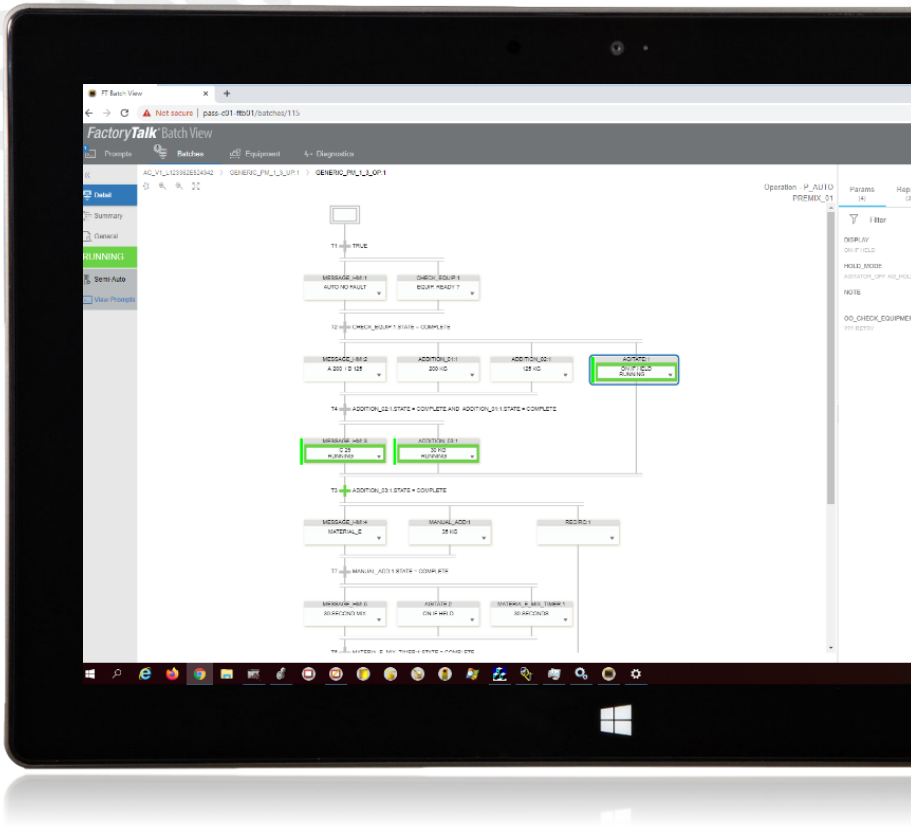
Use recipe formulations to reduce complexity of recipe management and provide greater flexibility in product variations. Easily adjust for seasonal, environmental, or other discrepancies.

Modern Intuitive Interface

FactoryTalk® Batch View™ provides a modern and intuitive portal into a comprehensive batching solution for effective operations. The product leverages it's own web server using HTML5 technology to provide native connectivity into a FactoryTalk Batch Server.

Enterprise Integration

FactoryTalk Batch v14.0 is the first release to include the new Enterprise Integration API. This API is build on top the of the Batch View Web Server and provides a modern API that allows web-based enterprise system to easily integrate with FactoryTalk Batch.



Rockwell Automation

expanding **human possibility**™

Thank you

www.rockwellautomation.com